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NASA Procedural Requirements

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Subject: NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements

Responsible Office: Office of the Chief Engineer

Chapter 5. Other Mission Support Investment (OMSI) Program and Project Requirements by Phase

5.1 OMSI Programs - Formulation Phase

5.1.1 Purpose: The purpose of program formulation activities is to establish a cost-effective program that meets Agency and Mission Directorate/Mission Support Office goals and objectives. The program FAD authorizes a program manager to initiate the planning of a new program and to perform the analyses required to formulate a program plan. Major reviews leading to approval at KDP-I are the PCDR, and the program Governing Body review.

5.1.2 Requirements: During program formulation, the program manager and the program team shall:

a. Support the Mission Directorate or Mission Support Office in developing and obtaining approval of the FAD, PCA, and the PPBE process.

b. Prepare and obtain approval of the program plan that follows the template in Appendix E.

c. Obtain approval of interagency and international agreements, as needed.

d. Plan, prepare for, and conduct a PCDR.

e. Develop all required KDP-I gate products as indicated in Table 6-1.

f. Plan, prepare for, and support the program Governing Body review prior to KDP-I.

5.2 OMSI Programs - Implementation Phase

5.2.1 Purpose: During implementation, the program manager works with the stakeholders and the constituent projects to execute the program plan in a cost-effective manner. PIRs and periodic independent assessments ensure that the program continues to contribute to Agency and Mission Directorate or Mission Support Office goals and objectives within funding constraints.

5.2.2 Requirements: During program implementation, the program manager and the program team shall:

a. Execute the program plan.

b. Conduct planning, program-level systems engineering, and integration, as appropriate to the program.

c. Support the Mission Directorate or Mission Support Office in initiating the projects selection process.

d. Support the MDAA or Mission Support Office Official-in-Charge in the selection of projects, either assigned or through a competitive process.

e. Approve project FADs and project plans.

f. Plan, prepare for, and conduct biennial PIRs.

g. Support Program Governing Body reviews prior to KDP-II, -III, -IV, etc.

h. Support the MDAA or Mission Support Office Official-in-Charge in updating the PCA.

i. Update the program plan.

j. Provide oversight of the projects within the program and report their status periodically.

k. Review project PPBE process inputs and prepare program process input.

l. Develop technologies and common solutions that cut across multiple projects within the program.

m. Develop all required gate products as indicated in Table 6-1 prior to KDP-II, -III, -IV, etc.

n. Plan, prepare for, and support the program Governing Body reviews prior to KDP-II, -III, -IV, etc.

5.3 OMSI Projects - Pre-Phase A

5.3.1 Purpose: During Pre-Phase A, a pre-project team studies a broad range of project concepts that contribute to program and Mission Directorate or Mission Support Office goals and objectives. These advanced studies along with interactions with customers and other potential stakeholders help identify a promising project-enabling concept and tentative project-level requirements. The team also identifies potential technology needs and assesses the gaps between such needs and current technology plans. These activities are focused toward a SCR and KDP-A. Pre-Phase A for OMSI projects is optional.

5.3.2 Requirements: If a Pre-Phase A is conducted, then the pre-project manager and team shall:

a. Obtain an approved project FAD.

b. Support the program manager in the development of the preliminary program requirements on the project.

c. Develop a preliminary system/project concept.

d. Develop a risk list and mitigation concepts.

e. Plan, prepare for, and conduct the SCR.

f. Baseline work agreements for Phase A.

g. Prepare all required KDP-A gate products indicated in Table 6-2.

h. Plan, prepare for, and support the project Governing Body review prior to KDP-A.

5.4 OMSI Projects - Phase A

5.4.1 Purpose: During Phase A, a project team is formed to fully develop a project concept and begin development of needed technologies. This work, along with interactions with customers and other potential stakeholders, helps finalize a project concept and the project-level requirements. These activities are focused toward System/Project Requirements Review. The phase culminates in KDP-B. Phase A activities for OMSI projects of small scale or scope may be combined with Phase B activities with the approval of the program manager.

5.4.2 Requirements: During Phase A, the project manager and project team shall:

a. Obtain an approved project FAD, if a pre-Phase A was not conducted.

b. Support the program manager in the development of the baseline program requirements on the project.

c. Establish the project structure and controls.

d. Initiate the development of MOUs/MOAs with domestic external partners, as needed.

e. Work with the program manager and HQ Office of External Relations to initiate international agreements, as

needed.

f. Prepare a preliminary project plan that follows the template in Appendix F.

g. Complete an AoA and select a preferred baseline system/project concept.

h. Develop a preliminary system/project operations concept.

i. Develop preliminary project requirements.

j. Working with the appropriate support organizations, develop an initial IT infrastructure assessment of project needs and Agency-wide and external capabilities to meet infrastructure needs.

k. Plan, prepare for, and conduct the SRR.

l. Finalize work agreements for Phase B.

m. Develop all required KDP-B gate products indicated in Table 6-2.

n. Plan, prepare for, and support the project Governing Body review prior to KDP-B.

5.5 OMSI Projects - Phase B

5.5.1 Purpose: During Phase B, the project team completes its preliminary design and technology development. These activities are focused toward completing the project plan and PDR. In addition, the NAR process is invoked prior to the project Governing Body review. The phase culminates in KDP-C.

5.5.2 Requirements: During Phase B, the project manager and the project team shall:

a. Support the program manager in the update of the baseline program requirements on the project.

b. Finalize external agreements, such as interagency and international agreements, procurements, MOUs, and facility resources.

c. Implement the preliminary project plan.

d. Finalize a project control tool set that includes a WBS and cost, schedule, and periodic status reporting processes and mechanisms.

e. Baseline project requirements.

f. Develop the project preliminary technical architecture.

g. Develop the project preliminary designs.

h. Develop the baseline operations concept.

i. Plan, prepare for, and conduct the PDR.

j. Identify any risk drivers and proposed mitigation plans for each risk.

k. Complete and obtain approval of the baseline project plan that follows the template in Appendix F.

l. Plan, prepare for, and support the NAR independent review team.

m. Baseline work agreements for Phase C.

n. Develop the gate products required for KDP-C indicated in Table 6-2.

o. Plan, prepare for, and support project Governing Body review prior to KDP-C.

5.6 OMSI Projects - Phase C

5.6.1 Purpose: During Phase C, the project completes the design that meets the detailed requirements, begins early production of project components requiring long-lead time, and makes acquisitions that may be required.

5.6.2 Requirements: During Phase C, the project manager and the project team shall:

a. Implement the baseline project plan.

b. Baseline the project technical architecture.

c. Develop and test all requisite prototypes.

d. Initiate all operational support and other enabling developments (e.g., facilities, equipment), including a preliminary operations handbook to support the operations team.

e. Develop/procure long lead-time project components.

f. Develop the preliminary training plan and training materials.

g. Plan, prepare for, and conduct the CDR.

h. Update the project plan that follows the template in Appendix F.

i. Baseline work agreements for Phase D.

j. Develop the gate products required for KDP-D as indicated in Table 6-2.

k. Plan, prepare for, and support the project Governing Body review prior to KDP-D.

5.7 OMSI Projects - Phase D

5.7.1 Purpose: During Phase D, the project performs project component assembly, integration, and test.

5.7.2 Requirements: During Phase D, the project manager and the project team shall:

a. Implement the project plan.

b. Prepare baseline test plans, test procedures, and test cases.

c. Initiate project component build, assembly, integration, and test.

d. Resolve all integration and test discrepancies.

e. Update the project plan that follows the template in Appendix F.

f. Prepare "as-built" or "as-deployed" documentation.

g. Develop the baseline training plan and materials.

h. Complete all operational support and other enabling developments (e.g., facilities, equipment, updated databases), including a baseline operations handbook.

i. Conduct operational tests and training.

j. Plan, prepare for, and conduct the ORR.

k. Baseline work agreements for Phase E.

l. Develop the gate products required for KDP-E as indicated in Table 6-2.

m. Plan, prepare for, and support the project Governing Body review prior to KDP-E.

5.8 OMSI Projects - Phase E

5.8.1 Purpose: During Phase E, the project implements the operations plan developed in previous phases.

5.8.2 Requirements: During Phase E, the project manager and the project team shall:

a. Implement the project plan.

b. Deploy and execute the project.

c. Update the training plan and training materials.

d. Document lessons learned.

e. Prepare and document systems decommissioning/disposal requirements and plans.

f. Baseline work agreements for Phase F.

g. Develop the gate products required for KDP-F as indicated in Table 6-2.

h. Plan, prepare for, and support the project Governing Body review prior to KDP-F.

5.9 OMSI Projects - Phase F

5.9.1 Purpose: During Phase F, the project implements the project decommissioning plan.

5.9.2 Requirements: During Phase F, the project manager and the project team shall:

a. Plan, prepare for, and conduct the DR.

b. Safely and in accordance with all laws and regulations, dispose of project assets.

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